CLAIMS

What is claimed is:

1. A suture anchor, comprising;

a bone engaging section formed along a bone engaging axis;

a bone engaging structure formed along said bone engaging section and defining a maximum diameter of the suture anchor;

a suture engaging section extending from said bone engaging section and defining a diameter less than or equal to said maximum diameter;

an eyelet formed in said suture engaging section to allow a selected portion of a suture to pass through and extend from said suture engaging section generally along said axis; and

a suture passage defined by said suture engaging section such that the selected portion of the suture remains substantially within said maximum diameter.

2. The suture anchor of claim 1, wherein said bone engaging section and said suture engaging section are substantially integrally formed as a single unit.

3. The suture anchor of claim 2, wherein the material of said single unit is selected from a group including stainless steel, cobalt chromium alloys, bio-absorbable polymers, and combinations thereof.

4. The suture anchor of claim 1, wherein said bone engaging structure includes a thread formed along said bone engaging section, wherein a maximum diameter of said thread defines said maximum diameter of the suture anchor.

5. The suture anchor of claim 4, wherein said thread is formed only on said bone engaging section.

6. The suture anchor of claim 1, wherein:

said suture engaging section is able to be substantially disposed below an exterior surface of a boney structure after implantation;

said eyelet is substantially exposed and accessible after implantation of the suture anchor.

7. The suture anchor of claim 1, wherein said an eyelet includes at least a first eyelet and a second eyelet wherein said suture passage interconnects said first eyelet and said eyelet such that a suture may be passed through said first eyelet through said passage and through said second eyelet and be held substantially within said suture engaging section.

8. The suture anchor of claim 7, wherein said suture passage allows a suture to be passed to an exterior of said suture engaging section at a point other than said first eyelet and said second eyelet.

9. The suture anchor of claim 1, wherein a suture passed through said suture passage is passed substantially only through said suture engaging section.

10. A method of providing a suture in a suture anchor having a bone engaging section and a suture engaging section with a suture passage formed in said suture engaging section, the method comprising:

providing a first suture passage section extending from a proximal end to a first suture portal;

providing a second suture passage section extending from said first suture portal to a second suture portal;

providing a third suture passage section extending from said second suture passage section through an exterior portion of the proximal end of the suture engaging section;

passing a suture through said first suture passage section from said proximal end through the first suture portal;

passing the suture from said first suture portal through said second suture portal; and

passing the suture from the second suture portal through the proximal exterior portion.

11. The method of claim 10, further comprising:

forming a first suture eyelet in the proximal end of the suture engaging section to allow access to the first suture passage section from the exterior of the proximal end of the suture engaging section;

wherein said first suture passage section allows the suture to extend at a selected angle relative to an axis of the bone engaging section.

12. The method of claim 10, wherein providing a first suture passage section and providing a second suture passage section includes:

forming said first passage section in the suture engaging section substantially at a selected angle relative to said second suture passage section wherein the suture passing from the first suture passage section to the second suture passage section is exposed to an angle of at least 90°.

13. The method of claim 10, further comprising:

forming a suture eyelet in the suture engaging section to allow access to the proximal exterior portion from said third suture passage section.

14. The method of claim 10, wherein passing a suture from the second side exterior portion through the proximal exterior portion includes:

passing the suture from said second passage section through said third passage section;

wherein passing the suture from the second suture passage section through the third suture passage section includes forming the suture at an angle not less than about 90°.

15. The method of claim 10, wherein providing a first suture passage section and providing a second suture passage section includes providing said first suture passage section including an exterior angle of at least about 90° relative to said second suture passage section.

16. The method of claim 10, wherein providing a second suture passage section and providing a third suture passage section includes:

providing said second suture passage section relative to said third suture passage section to have an exterior angle of at least 90°.

17. The method of claim 10, wherein providing a first suture passage includes forming a bore at an angle to a central axis of the suture anchor.

18. The method of claim 10, wherein providing a second suture passage includes forming a bore at an angle to a central axis of the suture anchor.

19. A suture anchor to provide a fixation of a suture in a selected anatomical portion, comprising:

an anatomical engaging section having an anatomical engaging portion; and

a suture engaging section extending from said anatomical engaging section;

wherein said suture engaging section defines a first suture eyelet and a second suture eyelet;

wherein said suture engaging section defines a suture holding passage interconnecting said first suture eyelet and said second suture eyelet to substantially hold a suture relative to said anatomical engaging section;

wherein said suture engaging section is adapted to be positioned generally within a selection portion of said selected anatomical portion.

20. The suture anchor of claim 19, wherein said anatomical engaging section and said suture engaging section are generally formed as a single piece of a single material.

21. The suture anchor of claim 20, wherein said anatomical engaging portion extends only along said anatomical engaging section.

22. The suture anchor of claim 19, wherein said suture holding passage includes a first passage section and a second passage section formed at an angle relative to each other to have an exterior angle of at least 90°.

23. The suture anchor of claim 19, wherein a suture is positionable through said first suture eyelet, said suture holding passage, and said second suture eyelet such that said suture is generally able to at least extend from one of said suture engaging section generally parallel and along an axis of said anatomical engaging section.

24. The suture anchor of claim 19, wherein said anatomical engaging section and said suture engaging section are adapted to be substantially received within the selected anatomical portion such that said suture engaging section is generally co-extensive with an exterior portion of said selected anatomical portion.

25. A suture anchor to anchor a suture in a selected bone portion, comprising:

a first member, including:

a bone engaging portion to engage a selected bone region;

a suture protecting portion to substantially limit contact of the suture with the bone portion;

a second member, including:

a suture engaging portion to hold a suture relative to said first member;

a first member engaging portion;

wherein the suture engages said suture engaging portion and is protected from generally contacting the selected bone portion after implantation of the suture anchor.

26. The suture anchor of claim 25, wherein said bone engaging portion and said suture protecting portion of said first member are integrally formed from a substantially a unitary portion.

27. The suture anchor of claim 25, wherein said suture engaging portion and said first member engaging portion of said second member are substantially integrally formed as a single unit.

28. The suture anchor of claim 25, wherein said bone engaging portion includes a deflectable member that is generally forced outwardly from said first member by said first member engaging portion;

wherein said first member engaging portion engages said deflectable member to increase a pull out strength of said first member from the selected bone portion.

29. The suture anchor of claim 28, wherein said first member engaging portion includes an annular ring defined by said second member that engages an interior of said deflectable member to force said deflectable member into the selected bone portion.

30. The suture anchor of claim 25, wherein said bone engaging portion includes a thread defined by an exterior of said first member to be substantially screwed into the selected bone portion.

31. The suture anchor of claim 25, wherein said suture protecting portion extends from the selected bone portion such that the suture does not contact the selected bone portion.

32. The suture anchor of claim 25, wherein said suture engaging portion includes:

a suture eyelet such that the suture may pass through said suture engaging portion;

a suture passage extending proximally from said suture eyelet such that said second member may be passed through an interior of said first member while the suture does not substantially engage the interior of said first member.

33. The suture anchor of claim 25, wherein said suture engaging portion defines a suture passage such that the suture may be held relative to said second member.

34. The suture of claim 25, wherein said first member engaging portion is able to engage said first member as said bone engaging portion engages the selected bone portion such that said second member is held relative to said selected bone portion and the suture is held relative said second member.

35. The suture anchor of claim 25, wherein said first member and said second member are substantially integrally formed as a single unit.

36. The suture anchor of claim 25, wherein said first member and said second member are substantially independent and distinct of one another;

wherein said second member is inoperably engageable with said first member to fix said second member in a location relative to said first member;

wherein said first member is rotatable relative to said second member.

37. The suture anchor of claim 36, wherein said second member further includes a bone piercing distal end.

38. The suture anchor of claim 36, wherein said first member may be rotated relative and independently of said second member to engage the selected bone portion while not substantially rotating said second member.